Knowledge, attitude and practices (KAP) regarding COVID-19 and Coronavirus anxiety levels in the Turkish population

Knowledge, attitude and practices (KAP) towards COVID-19

İsmail Biçer[1], Cuma Çakmak[2], Cemil Örgev[3], Halil Demir[4]
[1]Medical Documentation and Secretarial Program, Istanbul Arel University, Istanbul
[2]Department of Healthcare Management, Hacettepe University, Ankara
[3] Environmental Protection Technologies, Sakarya Upplied Sciences University, Sakarya
[4]Medical Documentation and Secretarial Program, Istanbul Rumeli University, Istanbul, Turkey

Abstract
Aim: The knowledge, attitude and practice level of the people about the disease can provide data on behavioral change for the health authorities.
This study aims to measure the knowledge, attitude, and practice levels of people living in Turkey towards COVID-19 and determine their anxiety levels.
Material and Methods: Eight hundred sixty people were reached through online surveys between May 20-30, 2020. Along with questions measuring demographic features, Knowledge, Attitude, and Practices (KAP) Towards COVID-19 and Coronavirus Anxiety Scale (CAS) were used in the research. Descriptive statistical analysis, chi-square tests, t-tests, one-way analysis of variance (ANOVA), multiple linear regression analyses, and logistic regression analysis were used in the study.
Results: The overall mean of the KAP scale was 10.65 ± 1.26. This shows that Turkish people have a high level of knowledge about COVID-19. Moreover, the overall mean of the anxiety scale was 1.96 ± 3.30, and the general anxiety levels of the participants were determined to be very low. Most of the participants showed positive attitudes towards the successful control of COVID-19 (65.9%) and Turkey's ability to defeat the disease (82.1%).
Discussion: It can be stated that this study is important because it is the first study evaluating the KAP and CAS levels for COVID-19 in Turkey. As a result, health education programs and awareness-raising activities targeting individuals with less knowledge about COVID-19 can be important in controlling the outbreak.

Keywords
COVID-19; Knowledge; Attitude; Anxiety; Turkey

Introduction

Coronavirus disease, also known as COVID-19, is an expanding pandemic caused by a new human coronavirus (available at: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports -) [1]. COVID-19 was first reported in December 2019, in Wuhan. According to the COVID-19 situation report by WHO on 1 February 2021, there were 102.399.513 total confirmed cases, and the total confirmed death number increased to 2.217.005 (available at: https://www.who.int/publications/m/item/weekly-operational-update-on-covid-19---1-february-2021).

Understanding individuals' knowledge, attitude, and behavior towards COVID-19 in the early stages of the epidemic helps governments and authorities to effectively apply the preventive and control measures [2]. Knowledge, attitudes, and practices regarding COVID-19 (KAP) play an important role in determining whether the community is ready to accept the behavior change measures taken by healthcare authorities. Evaluation of the society's KAP level in relation to COVID-19 will help in the development of preventative strategies related to the disease and programs aimed at encouraging and improving health [3]. Collecting more information about anxiety, knowledge, and attitude of the society during an outbreak is crucial for the improvement of public health authorities' and clinicians' efforts. This study aims to measure the knowledge, attitude, and practice levels of people living in Turkey towards COVID-19 and determine their anxiety levels.

Material and Methods

Participants

The population of this research consists of people who are above 18 years old and living in the seven regions of Turkey. The questionnaire was distributed via e-mail and expanded via snowball sampling. Data were collected for ten days. A total of 860 people participated in the study.

Measures

In the research, a questionnaire form was used as a data collection tool. The first part was devoted to the demographic features of the participants. In the second part, KAP which is developed by Lee (2020) [4] was used; in the third part, Coronavirus Anxiety Scale (CAS), which is a short mental screening to identify possible cases of dysfunctional anxiety related to the COVID-19 crisis and whose reliability and validity was completed by Bicer et. al. (2020) [5] was used. CAS is a 5-point Likert scale. KAP consists of 16 questions in total. Questions from 1-12, related to knowledge dimension, were answered as "true", "false", and "I don't know", and they evaluated the level of knowledge. The highest score from this dimension was calculated as 12. Also, the 5th, 6th, and 9th questions of the scale were reverse coded. Two questions were included for the measurement of Attitude and Practice each, and these questions were dichotomous, which were answered as "yes" or "no".

Statistical Analysis

The independent samples method was used to compare KAP scores according to demographic characteristics. T-test, the appropriate one-way variance analysis (ANOVA), or Chi-Square tests were made. Multivariate linear regression analysis, in which all demographic variables are used as independent variables and the knowledge score as the result variable was used to define factors related to information. Similarly, binary logistic regression analysis was used to identify the factors related to attitude and practice. In order to measure the relations between the variables and KAP and CAS, standardized regression coefficients (β), probability ratio (OR), and 95% confidence intervals were used. Data analyses were made with SPSS 22.0 version. The statistical significance level was identified as $p < 0.05$.

Ethical Considerations

The necessary permissions for the scales used were obtained from their authors via e-mail. In addition, permission for the study was taken from the COVID-19 Scientific Research and Evaluation Committee within the body of The General Directorate of Health Care Services of the Republic of Turkey's Ministry of Health (approved document number: 2020-05-12T13_15_57). Finally, ethics committee permission was taken from the Non-Interventional Clinical Research Ethics Committee of Sakarya University of Applied Sciences numbered 044.

Results

Women accounted for 66.4% of the participants and 33.6% of the participants were male. In addition, 62.9% (541) were single, 34.1% (293) were married and 3% (26) were divorced. Among the participants, 4.9% (42) had primary school education, 31.5% (271) had a high school education, 26% (224) had associate degree, 26% (224) undergraduate and 11.5%, (99) graduate education. The average age in the sample was calculated as 29.35 (SD: 10.23, range: 18-72) years, and the average household income was 5.559,92 (SD: 3.611,50, range: 1.000-20.000). Among the survey participants, 52% (447) lived in the Marmara Region, 26.3% (226) in the Central Anatolia Region, and 21.7% (187) in other regions. It was also reported that 17.4% (150) of the participants were diagnosed with COVID-19.

In the dimension used for the measurement of the knowledge levels of the participants within the scope of the study, the highest score was reported as 12. The average knowledge score in the sample was calculated as 10.66 (SD: 1.26, range: 3-12). In the knowledge scale, the question with the highest frequency was K12, and the question with the lowest frequency was K5 (reverse question). Most of the participants indicated that COVID-19 was controlled successfully (65.9%), and they had positive attitudes toward Turkey's ability to overcome the disease (82.1%). It was also seen that the participants highly adopted the practices such as avoiding crowded places (82.1%), and wearing masks when going out (96%). The highest score to be taken from the Coronavirus anxiety scale was 20. The anxiety score average was calculated as 1.97 (SD: 3.30, range: 0-20) in the sampling. Most of the participants answered questions such as "I felt dizzy, I had sleeping problems, I lost my appetite, I had nausea and stomach problems" with "rarely, less than a day or two or not at all".

It was analyzed using t-test and ANOVA test (one-way variance analysis) whether the KAP evaluations of the participants and assessments of anxiety levels differ according to demographic variables. Tukey HSD test was used to determine from

Table 1. Results of multiple linear regression

on factors associated with KAP						
Variable		**Standardized Coefficient Beta**	**Standard error**	**t**	**p**	**VIF***
Gender	Female	-.137	.008	-4.039	<0.001	1.045
	Male					
Education	Primary School	.167	.003	4.638	<0.001	1.187
	High School					
	Associate Degree					
	Undergraduate					
	Graduate					
Region of Residence	Marmara	.031	.003	.945	.364	1.058
	Central Anatolia					
	Aegean					
	Mediterranean					
	Black Sea					
	Eastern Anatolia					
	Southeastern Anatolia					
Marital Status	Married	.088	.008	2.033	<0.001	1.710
	Single					
	Divorced					
Age	18-29	.093	.008	2.131	<0.001	1.738
	30-49					
	50-72					
Total Household Income (TL)	1000-3999	-.022	.005	-.608	.543	1.237
	4000-7999					
	8000 and higher					
Has someone you know been diagnosed with coronavirus?	Yes	.032	.009	.945	.345	1.016
	No					
on factors associated with CAS						
Variable		**Standardized Coefficient Beta**	**Standard error**	**t**	**p**	**VIF***
Gender	Female	-.169	.048	-4.933	<0.001	1.045
	Male					
Education	Primary School	.005	.022	.140	.889	1.187
	High School					
	Associate Degree					
	Undergraduate					
	Graduate					
Region of Residence	Marmara	.070	.016	2.037	<0.001	1.058
	Central Anatolia					
	Aegean					
	Mediterranean					
	Black Sea					
	Eastern Anatolia					
	Southeastern Anatolia					
Marital Status	Married	-.013	.053	-.305	.761	1.710
	Single					
	Divorced					
Age	18-29	-.051	.048	-1.163	.245	1.738
	30-49					
	50-72					
Total Household Income (TL)	1000-3999	.056	.033	.134	.134	1.237
	4000-7999					
	8000 and higher					
Has someone you know been diagnosed with coronavirus?	Yes	-.086	.059	-2.543	<0.001	1.016
	No					

*VIF- Variance inflation factor
p<0.05 statistically significant

which groups the difference originated for the factors with statistically significant difference as the result of the ANOVA test. The result of the analysis shows that the KAP scores of the participants show significant differences with gender (p<0.05). There was a significant difference between the participants' KAP scores and their educational status (p <0.05). A significant difference was detected mainly between the graduates of primary school, high school, associate degree, and higher-level education graduates. Also, a significant difference was also detected between the marital status and ages of the participants (p<0.05). A significant difference was reported between married and single groups and between people aged 18-29 and older age groups. As a result of the analysis, it was seen that there was a significant difference between the CAS levels and genders of the participants (p<0.05). There was also a significant difference between the ages and CAS levels of the participants (p<0.05). The significant difference was determined between the age groups of 18-29 and 50-72. The CAS levels of the participants differed with the coronavirus diagnosis of someone they know (p<0.05).

In the study, correlation analysis was conducted to examine the relationships between KAP and CAS. A strong negative relationship was detected between KAP and CAS (r=-0.730; p<0.05). A small positive relationship was detected between the belief that COVID-19 will be taken under control in the World and Turkey's success on COVID-19 r=0.235; p<0.01.

According to the results of the multiple regression analysis, in which demographic questions were the dependent variables and KAP was independent variable (Table 1), there was a significant effect on gender (β=-0.137: p<0.001), education (β=0.167: p<0.001), marital status (β=0.088: p<0.001), and age (β=0.093: p<0.001). There was no versatile evidence between the region of residence, total household income, coronavirus diagnosis of a person they know, and knowledge (VIF range = 1.016 and 1.237: p> 0.05). In the multiple linear regression analysis conducted to determine the effect of demographic questions on CAS (Table 1), gender (β=-0.169: p<0.001), region of residence (β=0.070: p<0.001), and coronavirus diagnosis of a person known (β=-0.086: p<0.001) showed a significant relationship with anxiety score. There was no versatile evidence between the education, marital status, age, a total household income with anxiety (VIF range=1.187 and 1.738: p>0.05).

Table 2. Chi-squares Test Results

COVID-19 attitudes according to demographic variables								
		Attitudes n (%) or mean (standard deviation)						
		A1: Do you agree that COVID-19 will finally be successfully controlled?				A2: Do you have confidence that Turkey can win the battle against the COVID-19 virus?		
Variable		**Agree (n, Row %)**	**Disagree (n, Row %)**	**Don't know (n, Row %)**	**X²-Value df* p**	**Yes (n, Row %)**	**No (n, Row %)**	**X²-Value df* p**
Gender	Female	371(65%)	71(12.4%)	371(65%)	X²-Value=2.170 df=2 p=0.338	463(81.1%)	108(19.8%)	X²-Value=1.466 df=1 p=0.226
	Male	196(67.8%)	40(13.8%)	196(67.8%)		244(84.4%)	45(15.6%)	
Education	Primary School	35(83.3%)	0	35(83.3%)	X²-Value=15.681 df=8 p=0.047	39(92.9%)	3(7.1%)	X²-Value=5.574 df=4 p=0.233
	High School	178(65.7%)	34(12.5%)	178(65.7%)		226(83.4%)	45(16.6%)	
	Associate Degree	155(69.2%)	27(12.1%)	155(69.2%)		186(83%)	38(17%)	
	Undergraduate	142(63.4%)	37(16.5%)	142(63.4%)		177(79%)	47(21%)	
	Graduate	57(57.6%)	13(13.1%)	57(57.6%)		78(79.8%)	20(20.2%)	
Region of Residence	Marmara	301(67.3%)	55(12.3%)	301(67.3%)	X²-Value=14.160 df=12 p=0.291	370(82.8%)	77(17.2%)	X²-Value=9.170 df=6 p=0.164
	Central Anatolia	139(61.5%)	31(13.7%)	139(61.5%)		185(81.9%)	41(18.1%)	
	Aegean	15(71.4%)	0	15(71.4%)		16(76.2%)	5(23.8%)	
	Mediterranean	21(72.4%)	5(17.2%)	21(72.4%)		19(65.5%)	10(34.5%)	
	Black Sea	19(70.4%)	1(3.7%)	19(70.4%)		24(88.9%)	3(11.1%)	
	Eastern Anatolia	20(71.4%)	3(10.7%)	20(71.4%)		26(92.9%)	2(7.1%)	
	Southeastern Anatolia	52(63.4%)	16(19.5%)	52(63.4%)		67(81.7%)	15(18.3%)	
Marital Status	Married	195(66.6%)	40(13.7%)	58(19.8%)	X²-Value=2.448 df=4 p=0.654	243(82.9%)	50(17.1%)	X²-Value=0.181 df=2 p=0.913
	Single	353(65.2%)	118(21.8%)	70(12.9%)		443(81.9%)	98(18.1%)	
	Divorced	19(73.1%)	1(3.8%)	6(23.1%)		21(80.8%)	5(19.2%)	
Age	18-29	356(66%)	73(13.5%)	110(20.4%)	X²-Value=6.430 df=4 p=0.169	444(82.4%)	95(17.6%)	X²-Value=1.322 df=2 p=0.516
	30-49	168(63.2%)	36(13.5%)	62(23.3%)		215(80.8%)	51(19.2%)	
	50-72	43(78.2%)	2(3.6%)	10(18.2%)		48(87.3%)	7(12.7%)	
Total Household Income (TL)	1000-3999	199(65.7%)	35(11.6%)	69(22.8%)	X²-Value=1.816 df=4 p=0.769	263(86.8%)	40(13.2%)	X²-Value=13.317 df=2 p<0.001
	4000-7999	251(67.1%)	50(13.4%)	73(19.5%)		309(82.6%)	65(17.4%)	
	8000 and higher	117(63.9%)	26(14.2%)	40(21.9%)		135(73.8%)	48(26.2%)	
Has someone you know been diagnosed with coronavirus?	Yes	95(63.3%)	22(14.7%)	33(22%)	X²-Value=0.682 df=2 p=0.711	121(80.7%)	29(19.3%)	X²-Value=0.296 df=1 p=0.587
	No	472(66.5%)	89(12.5%)	149(21%)		586(82.5%)	124(17.5%)	
Attitude Score		567 (65.9%)	111 (12.9%)	182 (21.2%)	X²-Value=45.519 df=18 p<0.001	707 (82.2%)	153 (17.8%)	X²-Value=7.172 df=9 p=860

COVID-19 attitudes according to demographic variables							
		Practices, n (%) or mean (standard deviation)					
		P1. In recent days, have you gone to any crowded place?			P1. In recent days, have you gone to any crowded place?		
Variable		Yes (n, Row %)	No (n, Row %)	X²-Value df* p	Yes (n, Row %)	No (n, Row %)	X²-Value df* p
Gender	Female	81(14.2%)	490(85.8%)	X²-Value=16.007 df=1 p<0.001	555(97.2%)	16(2.8%)	X²-Value=5.932 df=1 p=0.015
	Male	73(25.3%)	216(74.7%)		271(93.8%)	18(6.2%)	
Education	Primary School	2(4.8%)	40(95.2%)	X²-Value =8.134 df=4 p=0.087	39(92.9%)	3(7.1%)	X²-Value=2.445 df=4 p=0.655
	High School	47(17.3%)	224(82.7%)		258(95.2%)	13(4.8%)	
	Associate Degree	36(16.1%)	188(83.9%)		217(96.9%)	7(3.1%)	
	Undergraduate	48(21.4%)	176(78.6%)		217(96.9%)	7(3.1%)	
	Graduate	21(21.2%)	78(78.8%)		95(96%)	4(4%)	
Region of Residence	Marmara	89(19.9%)	358(80.1%)	X²-Value =8.675 df=6 p=0.193	436(97.5%)	11(2.5%)	X²-Value=12.292 df=6 p=0.056
	Central Anatolia	40(17.7%)	186(82.3%)		218(96.5%)	8(3.5%)	
	Aegean	0	21(100%)		20(95.2%)	1(4.8%)	
	Mediterranean	5(17.2%)	24(82.8%)		27(93.1%)	2(6.9%)	
	Black Sea	2(7.4%)	25(92.6%)		25(92.6%)	2(7.4%)	
	Eastern Anatolia	6(21.4%)	22(78.6%)		26(92.9%)	2(7.1%)	
	Southeastern Anatolia	12(14.6%)	70(85.4%)		74(90.2%)	8(9.8%)	
Marital Status	Married	58(19.8)	235(%80.2)	X²-Value =1.176 df=2 p=0.555	286(97.6%)	7(2.4%)	X²-Value=2.925 df=2 p=0.232
	Single	91(16.8)	450(%83.2)		515(95.2%)	26(4.8%)	
	Divorced	5(19.2)	21(%80.8)		25(96.2%)	1(3.8%)	
Age	18-29	84(15.6%)	455(84.4%)	X²-Value =9.021 df=2 p=0.011	541(95.4%)	25(4.6%)	X²-Value =1.953 df=2 p=0.377
	30-49	63(23.7%)	203(76.3%)		258(97%)	8(3%)	
	50-72	7(12.7%)	48(87.3%)		54(98.2%)	1(1.8%)	
Total Household Income (TL)	1000-3999	46(15.2%)	257(84.8%)	X²-Value =9.021 df=2 p=0.011	280(92.4%)	23(7.6%)	X²-Value=16.331 df=2 p<0.001
	4000-7999	69(18.4%)	305(81.6%)		367(98.1%)	7(1.9%)	
	8000 and higher	39(21.3%)	144(78.7%)		179(97.8%)	4(2.2%)	
Has someone you know been diagnosed with coronavirus?	Yes	28(18.7%)	122(81.3%)	X²-Value =0.071 df=1 p=0.789	144(96%)	6(4%)	X²-Value =0.001 df=1 p=0.974
	No	126(17.7%)	584(82.3%)		682(96.1%)	28(3.9%)	
Practice Score		154(17.9%)	706(82.1%)	X²-Value =12.523 df=9 p=0.185	826(96.0%)	34(4%)	X²-Value=37.463 df=9 p<0.001

*df- degree of freedom
p<0.05 statistically significant

The ratio of the right answers in the attitudes in KAP scale was generally high (Table 2); 65.9% of the participants believe that COVID-19 can be successfully controlled. Also, 82.2% of the participants believe that Turkey can win the war against the COVID-19 virus. Univariate analysis is significantly related to education and total household income (p <0.005); 83.3% of primary school graduates, 69.2% of associate degree graduates, 63.4% of undergraduate graduates believe that COVID-19 can be successfully taken under control. Furthermore, 82.6% of the people whose total household income is between 1000-3999 and 86.8% of the respondents with income between 4000-7999 believe that Turkey could win the war against the COVID-19 virus.

The level of correct answers was found to be high in the implementation questions on the KAP scale (Table 2) in general; 82.1% of the participants have not visited crowded places in recent days. In addition, 96% of the participants have worn masks when they left home recently. Univariate analysis is significantly related to gender, age and total household income (p <0.005); 85.8% of women have not gone to crowded places in recent days, and 97.2% have used masks in recent days; 87.3% of participants between the ages of 50-72 have not visited crowded places in recent days, and 98.2% of them wore masks when leaving the house. While 78.7% of the participants with a total household income of 8000 and above did not go to crowded places, 97.8% of them used masks when they left home recently.

Results of Logistic Regression Analysis evaluating the relationship between socio-demographic features of the participants and their attitude towards COVID-19

It was detected that the knowledge score of COVID-19 (OR: 1.01: p>0.005) has no significant relationship between beliefs that COVID-19 will be taken under control successfully. However, the 18-29 age group believed 0.11 times more, and the 30-49 age group believed 0.14 times more than the 50-72 age group that Turkey will win the war against COVID-19. However, people living in the Mediterranean Region believe 0.13 times more than the people from other regions that Turkey will win the war against COVID-19. Compared to people with an income of over 8000 TL, people whose income is between 1000-3999 TL believe that Turkey will win the war against COVID-19 2.39 times more, and people with an income of 4000-7999 believe 1.66 times more. Table 3 shows the results of Logistic Regression Analysis evaluating the practices of the

socio-demographic characteristics of the participants towards COVID-19. It was determined that the COVID-19 knowledge score (OR: 0.93: p> 0.005) has no significant relationship with going to crowded places in recent days. However, it was seen that women pay attention to going to crowded places 2.27 times more than men. The COVID-19 knowledge score (OR: 0.65: p <0.001) was found to be significantly associated with wearing a mask when leaving home recently. It was detected that those with a total household income of 1000-3999 TL were 4.01 times more careful about wearing a mask when leaving home than the group with an income of 8000 or more.

Table 3. Logistic regression analysis results

factors significantly related to attitudes towards COVID-19				
	OR	P	OR	P
Variable	A1: disagree with final success (vs. agree)		A2: no confidence of winning	
Gender				
Female	1.17	0.526	0.75	0.177
Male (Reference)				
Education				
Primary School	1.50	0.989	2.21	0.240
High School	1.00	0.990	0.92	0.817
Associate Degree	1.24	0.621	0.92	0.814
Undergraduate	0.75	0.466	0.85	0.602
Graduate (Reference)				
Region of Residence				
Mediterranean	0.34	0.234	0.13	0.019
Central Anatolia	0.46	0.312	0.35	0.179
Marmara	0.56	0.434	0.40	0.238
Aegean	823	0.992	0.24	0.125
Black Sea	2.04	0.578	0.61	0.609
Southeastern Anatolia	0.33	0.163	0.29	0.132
Eastern Anatolia (Reference)				
Marital Status				
Married	0.33	0.322	1.10	0.855
Single	0.22	0.169	1.35	0.574
Divorced (Reference)				
Age				
18-29	0.11	0.017	0.82	0.703
30-49	0.14	0.022	0.71	0.472
50-72 (Reference)				
Total Household Income(TL)				
1000-3999	1.05	0.870	2.39	0.001
4000-7999	0.98	0.962	1.66	0.030
8000 and higher (Reference)				
Has someone you know been diagnosed with coronavirus?				
Yes	0.94	0.854	0.94	0.827
No (Reference)				
COVID-19 Knowledge Score	1.01	0.881	3.22	0.176
factors significantly related to attitudes towards COVID-19				
Gender				
Female	1.50	0.177		
Male (Reference)				
Education				
Primary School	419	0.990		
High School	0.54	0.203		
Associate Degree	0.61	0.323		
Undergraduate	0.48	0.103		
Graduate (Reference)				
Region of Residence				
Mediterranean	0.17	0.122		
Central Anatolia	0.69	0.676		
Marmara	0.61	0.561		
Aegean	1.24	0.992		
Black Sea	2.66	0.479		
Southeastern Anatolia	0.30	0.191		
Eastern Anatolia (Reference)				
Marital Status				
Married	0.43	0.473		
Single	0.18	0.141		
Divorced (Reference)				
Age				
18-29	0.08	0.008		
30-49	0.15	0.039		
50-72 (Reference)				
Total Household Income(TL)				
1000-3999	1.61	0.236		
4000-7999	1.05	0.877		
8000 and higher (Reference)				
Has someone you know been diagnosed with coronavirus?				
Yes	1.05	0.870		
No (Reference)				
COVID-19 Knowledge Score	0.92	0.377		
factors significantly related to COVID-19 practices				
	OR	P	OR	P
Variable	P1: going to a crowded place		P2: not wearing a mask	
Gender				
Female	2.27	0.000	0.50	0.090
Male (Reference)				
Education				
Primary School	3.94	0.082	0.77	0.782
High School	0.84	0.607	0.38	0.162
Associate Degree	0.99	0.994	0.27	0.084
Undergraduate	0.80	0.482	0.51	0.334
Graduate (Reference)				
Region of Residence				
Mediterranean	1.28	0.719	1.22	0.856
Central Anatolia	1.32	0.587	0.63	0.593
Marmara	1.03	0.943	0.38	0.257
Aegean	4.59	0.998	0.84	0.896
Black Sea	2.91	0.224	0.93	0.948
Southeastern Anatolia	2.12	0.187	1.25	0.791
Eastern Anatolia (Reference)				
Marital Status				
Married	0.77	0.645	0.63	0.701
Single	0.81	0.703	0.31	0.322
Divorced (Reference)				
Age				
18-29	0.67	0.421	1.19	0.882
30-49	0.44	0.073	1.21	0.864
50-72 (Reference)				
Total Household Income(TL)				
1000-3999	1.12	0.669	4.01	0.028
4000-7999	1.03	0.887	0.91	0.931
8000 and higher (Reference)				
Has someone you know been diagnosed with coronavirus?				
Yes	0.96	0.880	1.25	0.643
No (Reference)				
COVID-19 Knowledge Score	0.93	0.390	0.65	0.000

Discussion

The general knowledge level about COVID-19 is critical to applying precautions and controlling the epidemic. In this sense, it is significant to increase the level of knowledge, attitude, practices towards the virus, and decrease anxiety. This study determines the level of anxiety in society and KAP level of COVID-19. KAP level is high in Turkey. This shows that people in Turkey have a high level of knowledge about COVID-19. Most of the participants have positive attitudes towards the successful control of COVID-19 and Turkey's ability to overcome the disease; 98.5% of respondents know that people who come into contact with someone infected with the COVID-19 virus should be isolated in a suitable place immediately, and the overall observation period is 14 days. It is also seen that participants have highly adopted practices such as not going to crowded places or wearing masks when going out. At the same time, 97.8% of the participants know that they should avoid public transport to prevent COVID-19 infection. Also, the low levels of general CAS average indicate very low anxiety levels.

As a result of the analysis, it was found that the variables such as gender, age, total household income, and education were related to KAP. Most of the society took measures such as avoiding crowded places and wearing masks when going outside to prevent the spread of COVID-19. These strict preventive practices are primarily restrictions by the government, but the high level of community participation is important for prevention and control. The epidemic-preventative behavior results from the society's awareness of the COVID-19 virus, which can spread easily. This study shows that 17.9% of the participants went to crowded places and 4% of them did not wear a mask. Potentially, this is seen as a result of low knowledge of COVID-19, and people showing this behavior were mainly men, primary school graduates, and had a total household income lower than 1000-3999 TL. In terms of regions, people from East Anatolia and the Black Sea regions show this kind of behavior. KAP level is high in Turkey. The findings of this research coincide with the findings of many studies in the field [3-6--16]. However, studies conducted in some countries show that KAP levels are low [17-20].

Within the scope of this study, based on the meaningful relationships between knowledge, attitude, and practice, it is understood that KAP levels in the Turkish community are high and its anxiety level is low. Strong health care system of Turkey, serious measures taken from a scientific point of view by government and health authorities since the outbreak first occurred in China, the daily and transparent share of information about the virus, and public awareness raised by specialists through media can be shown as the reasons for this situation. Although the general level of the society is high, for individuals with low knowledge, application, and practice, awareness can be raised through measures such as health education programs, encouraging positive attitudes, and maintaining safe practices. It is important to stay away from social media in order to prevent information pollution, to adhere to the recommendations and precautions of healthcare authorities. Combining rumors is extremely harmful because wrong information can cause harmful effects on public health. Disadvantaged and vulnerable groups, such as the elderly population and rural residents, are more likely to have low knowledge, negative attitudes, and practices regarding COVID-19 due to their limited access to the internet and online health information resources. For this reason, the knowledge, attitude, and practice of vulnerable groups towards COVID-19 should also be improved. Moreover, it is recommended for future researches to study the KAP levels of disadvantaged groups and people living in rural areas. Revealing general knowledge, attitude, and practice levels and anxiety levels in Turkey through a randomized selected, high-volume sampling, covering the entire country by the Ministry of Health or the Turkish Statistical Institute (TUIK), can provide significant information. As any other study, this study has some limitations. A web-based research method was used for the study, and participation in the study was not obtained by the probability sampling method.

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